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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/687,211	10/16/2003	Fuquan Zeng	N9860-WPT-EAS (N2460)	7148

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EXAMINER	
POULOS, SANDRA K	

ART UNIT	PAPER NUMBER
1714	

DATE MAILED: 02/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/687,211	ZENG ET AL.	
	Examiner	Art Unit	
	Sandra K. Poulos	1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 1/02/04
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in United Kingdom on October 16, 2002. It is noted, however, that applicant has not filed a certified copy of the UK Patent Application No. 0224072.9 application as required by 35 U.S.C. 119(b).

Specification

2. The abstract of the disclosure is objected to because of the legal phraseology "comprising". Examiner suggests replacing with "containing" or "including." See MPEP § 608.01(b).

3. The disclosure is objected to because of the following informalities: Throughout the specification the temperatures are sometimes given in "°C" and other time in "C". Please use consistent notation for the temperature. The pages where it is denoted "C" rather than "°C" are: 3, 5, 19. Also, the title under the heading "abstract" and on the first page of the specification has the word "recycling" spelled incorrectly.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-5, 7, 10, 14, and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Berard et al (US 2005/0198742).

Berard discloses a method of removing dye from polyethylene terephthalate fibers (para 2). Some fibers are made from recycled PET bottles (para 5). The method completely removes the dye molecules from the PET instead of breaking only the chromophore of the dye (para 8, 11). It is inherent that more than 40% of the dye is extracted because the process "completely removes" the dye from the PET. The process comprises mixing the polyester and dye removal composition in a vessel that reaches a temperature of 140°C (para 24-28). When the dye has been removed, the polyester fibers can be recovered; the fibers can be melted and pelletized before being extruded (para 31, 7).

In claim 1 Berard discloses a method for removing dye from polyester comprising: a) contacting the polyester with a dye removal composition comprising an aqueous solution of at least one leveling agent to form a mixture; b) heating the mixture until it reaches an elevated temperature and a pressure higher than the equilibrium pressure of the dye removal composition at the elevated temperature; c) maintaining the mixture at the elevated temperature and pressure for a time interval sufficient to at least

partially remove dye from the polyester; d) cooling the mixture; e) separating the polyester from the mixture; and f) removing any residual dye removal composition from the polyester.

Therefore, Berard anticipates the cited present claims.

5. Claims 1, 7-11, 14, and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Khait (US 6,180685).

Khait discloses a method of making an article of manufacture having a substantially homogenous color from mixed-color polymeric material, such as sorted or unsorted, commingled polymeric scrap material that is supplied to extruder strew means rotated to transport the polymeric material along the length thereof to subject the material to solid state pulverization to form pulverized particulates that are molded, extruded or otherwise melt processed to form a substantially homogeneously colored shape characterized by the absence of color streaking and marbleizing, despite the particulates originating from mixed-color polymeric material and typically, the pulverized powder is processable to a substantially homogenous pastel color tone corresponding to a dominant color of a particular scrap component in the feedstock (col 5, lines 1-18; col 14, lines 43-56).

The post-consumer polymeric waste typically includes soft drink bottles made of PET (col 6, lines 61-67). Khait discloses that the polymeric scrap have "various colors as a result of the wide variety of colorants used in the plastic bottling, container, and other plastic industries" (col 7, lines 47-50). The term "various colors" indicates that

there is more than one colorant. In column 10, lines 57-58 the plastic feedstock is white, red, blue, and yellow. Khait does not disclose carbon black or similar inorganic pigments in the plastic.

Therefore, Khait anticipates the cited present claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 6, 12, 13, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Khait (US 6,180685) in view of Gamble et al (US 5,298,530).

The discussion with respect to Khait in paragraph 5 above is incorporated herein by reference.

Khait does not disclose (i) the step of recovering the extracted colorant for re-use, and (ii) forming a bottle from the recycled thermoplastic composition.

With respect to (i), Gamble discloses a process of recovering components from scrap polyester comprising polyethylene terephthalate comprising heating the mixture and recovering the melt in one vessel and recovering the other components in the form of a vapor stream exiting the vessel (col 5, lines 38-40; col 6, lines 1-30).

It would have been obvious to one of ordinary skill in the art to recover the colorants when recycling a mixture of colored PET waste wherein the final recycled product has reduced color. One would have been motivated to do so because the colorants can be re-used to color other plastics and since pigments are disclosed as expensive in Khait (col 2, lines 26-30), it would have been beneficial to recover colorants for further use and thus lower costs. One would have a reasonable expectation of success in combining the method of Khait with that of Gamble because both are processes of removing contaminants from polyesters. Therefore, it would have been obvious to combine Khait with Gamble to obtain the invention as specified in the present claims.

7. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Khait (US 6,180685) in view of Schloss et al (US 6,051,295).

The discussion with respect to Khait in paragraph 5 above is incorporated herein by reference. Additionally, Khait discloses that much of the polymeric scrap is from bottles (col 1, 42-58) and that the recycling process disclosed can be used for blow molding (col 2, lines 32-36; col 14, lines 23-42).

Khait does not disclose a process of forming a bottle from the recycled thermoplastic composition by injection molding to form a bottle preform and then the bottle preform is blow molded to form a bottle.

Schloss discloses a method of injection molding to form a bottle preform and blow molding the bottle (col 2, lines 1-24). Recycled PET is used in manufacture of the bottle (col 1, lines 61-67).

It would have been obvious to one of ordinary skill in the art to use the composition disclosed by Khait for making the bottle by the process specified by Schloss because the composition in Khait was able to undergo blow molding and was recycled from PET bottles and so it would have been obvious that the resulting composition would be usable in making other bottles. Further, Schloss discloses that using recycled plastics such as PET are favorable in making bottle because it is less expensive than virgin PET. Therefore, it would have been obvious to combine Khait with Schloss to obtain the invention as specified in the present claims.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Wright et al (US 3,043,785) discloses a method for de-pigmenting polymeric compositions in order to reclaim the polymeric constituent therefrom for subsequent reuse.

Al-Ghatta (US 5,049,647) discloses a method for the reduction of impurities which may be present in polymer materials based on polyethylene terephthalate that is particularly useful in the recycling of PET bottles.

Rule (US 6,103,774) discloses a process for removing contaminants from post-consumer polyester.

Schwartz (US 6,147,129) discloses a method for treating polyesters that when used in the recovery of polyester materials containing contaminants and/or impurities, the method can provide a superior polyester product both in terms of color.

JP 06-234862 and JP 06-072922 disclose removal of colorants for the recovery of PET.

DE-19839147 discloses removal of dyes from plastic to allow for recycling.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sandra K. Poulos whose telephone number is (571) 272-6428. The examiner can normally be reached on M-F 7:30-4:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SKP
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2/8/06

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